AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) Method for enhancing the ratio between the main lobe (5) and grating lobes (7) in an antenna array (1) comprising a number of n antenna elements (2), which method comprises the steps of;

- receiving analog signals on a number of m antenna array (1) elements (2);

-producing a radiation diagram for the array (1) from the values in the signals, and

c h a r a c t e r i z e d i n that the method comprises the steps of;

step a) - receiving analog signals on all m antenna elements (2) at a first time (t_1), where m is an integer equal to or less than n but greater than two;

- producing a first radiation diagram from the values in the signals from the first time (t_1);

-saving the radiation diagram from the first time (t_1)

step b) - switching off or reducing the signal from one antenna element (2'), located between the two outermost antenna elements (2) of the array, at a second time (t_2);

-receiving analog signals on all m antenna elements (2) except from the one switched off or reduced antenna element (2');

- producing a second radiation diagram from the values in the signals from the second time (t_2)

-saving the second radiation diagram;

step c) -adding the values of the first radiation diagram to the corresponding values of the second radiation diagram and thereby producing a sum radiation diagram .

2. (original) Method according to claim 1, c h a r a c t e r i z e d i n that;

-the sequence according to step b) is repeated x times until only the m-x antenna elements (2) on the outermost ends remain, where x is an integer less than m-2 and greater than zero, denoting the number of removed or reduced antenna elements (2'), and where;

-step c) is used for producing a sum radiation diagram by adding all the corresponding values of the radiation diagrams from all the x times (t_x).

3. (currently amended) Method according to ~~any one of the previous claims~~ claim 1, c h a r a c t e r i z e d i n that the analog signals are converted to digital signals by sampling before the radiation diagrams are produced.

4. (currently amended) Method according to ~~any one of the previous claims~~ claim 1, c h a r a c t e r i z e d i n that the values are represented in the radiation diagrams as the gain ($G(\theta)$) for a number of angles (θ).

5. (currently amended) Method according to ~~any one of the previous claims~~ claim 1, characterized in that the distance between each of the antenna elements (2) is the wavelength lambda divided by two or less.

6. (currently amended) Method according to ~~any one of the previous claims~~ claim 1, characterized in that the angle (θ) is varied between $-\pi/2$ and $\pi/2$.

7. (original) Antenna array system (20) comprising an antenna array (1) with a number of n antenna elements (2), where the antenna array system (20) comprises means (21) for enhancing the ratio between the main lobe (5) and grating lobes (7), wherein the system comprises;

- the antenna array (1) adapted for receiving analog signals on a number of m antenna array elements (2), and;

-means (22) for producing a radiation diagram for the array from the values in the digital signals,

characterized in that the system comprises;

a) - the antenna array (1) adapted for receiving analog signals on all m antenna elements (2) at a first time (t_1), where m is an integer equal to or less than n but greater than two;

- means (22) for producing a first radiation diagram for the array (1) from the values in the digital signals from the first time (t_1);

-means (23) for saving the radiation diagram from the first time (t_1)

b) - means (24) for switching off or reducing the signal from one antenna element (2'), located between the two outermost antenna elements (2) of the array, at a second time (t_2);

- the antenna array (1) adapted for receiving analog signals on all m antenna elements (2) except from the one switched off or reduced antenna element (2');

- means (22) for producing a second radiation diagram for the array from the values in the digital signals from the second time (t_2)

-means (23) for saving the second radiation diagram;

c) -means (25) for adding the values of the first radiation diagram to the corresponding values of the second radiation diagram and thereby producing a sum radiation diagram.

8. (original) Antenna array system (20) according to claim 7,

c h a r a c t e r i z e d i n that the system comprises;

-means (22, 23, 24) for repeating the sequence according to b) x times until only the m-x antenna elements (2) on the outermost ends remain, where x is an integer less than m-2 and greater than zero, denoting the number of removed or reduced antenna elements (2'), and;

-means (25) according to c) for producing a sum radiation diagram by adding all the corresponding values of the radiation diagrams from all the x times (t_x).

9. (currently amended) Antenna array system (20) according to claim 7 ~~or 8~~, characterized in that the system comprises means (26) for converting the analog signals to digital signals by sampling before the radiation diagrams are produced.

10. (currently amended) Antenna array system (20) according to ~~any one of claims 7-9~~ claim 7, characterized in that the system comprises means (22) for representing the values in the radiation diagrams as the gain ($G(\theta)$) for a number of angles (θ).

11. (currently amended) Antenna array system (20) according to ~~any one of claims 7-10~~ claim 7, characterized in that the distance between each of the antenna elements (2) is the wavelength lambda divided by two or less.